PANEL SUMMARIES

Panel 1 -- Weather Information Needs & Requirements Results

- We've come a long way in the past 10 years!
- Pavement temperatures (observations/forecasts) are critical
  - Unreliable to predict using air temperature and/or algorithms
- Temperature trends are important
- Users want time of onset, accuracy, and lead-times
  - Accuracy is high priority
- Need to closely examine practicality versus getting too sophisticated
- Data gathering deficiencies
  - Standards - siting, observing practices
  - Duplication of effort
- Data sharing represents an opportunity
  - Legal questions/liability concerns exists
- Transit is very diverse--need to remember waterways/ferry systems

Panel 2A -- Government Capabilities, Services and Initiatives

- Panel consisted of:
  - Users (DOI and FEMA)
  - Providers (NWS and DOD)
- Opportunities exist within DOI for improved weather information for surface transportation
- Weather information cuts across all facets of emergency management
  - Preparedness, response, recovery, and mitigation
- NWS
  - Designated several WFOs as Rapid Prototyping sites to develop better resolution digital products
    - Potential for one to be the focus for development of WIST-specific products
  - Encourage state DOTs to work with local WFOs to continue to meet WIST needs
- DOD
  - Significant national resource
  - Availability of capability
    - Directly leveragable by NWS
    - Products available to state DOTs?
- Need to continue private/public partnerships
  - Need focused effort to work road weather data issues

Panel 2B -- Commercial Capabilities, Services and Initiatives

- Public/private partnership is critical to successful progression from infancy to full operational capability for all entities
- Traveling public should continue to have access to free weather information and expect to see pinpoint forecast in the future
- DOTs need pinpoint forecast and decision-making tools that directly utilize weather information and roadway conditions to recommend actions
- Science of weather will rise to expectations and needs of customers
  - Mesoscale models still need improvement to address surface transportation
  - Require good high-resolution weather observations
  - Need human forecaster interpretations and sanity check
- Education of all sides (user and providers) is important for the successful development and use of surface transportation weather products
- Key is to take data and make useful information out of it
  - Users need relevant information to make decisions
  - Standardize formats for all data services and communications
  - Centralized collection/quality control of data

Panel 3 -- Technical Risks and Challenges

- Decision support systems have made dramatic evolution last 5 years--impacts of Internet
  - Risks: Limits to numerical weather prediction
    - Recognize limits
    - Use human oversight = human in the loop for tailoring and sanity check
  - Risks: One size does NOT fit all applications
    - Tailoring
    - Effective data exchange (standards)
  - Initiative: Increase awareness across disciplines of transportation and meteorology
  - Initiative: Parallel R&D in meteorology and transportation
- Four major areas:
  - Weather diagnosis and forecast
    - "*misoscale*" models - 1-2 m resolutions in horizontal and vertical domain
  - Weather data acquisition
    - National access (standards, roles)
    - Collect all observational data
  - Decision Support Systems
    - User community is diverse
    - Must respond to bottom-up need to be accepted by users
    - Evolutionary change to work process
  - Long-term, multi-faceted R&D must be established
- Problem: NOT in sync with state ITS architecture

- Successful collaboration
  - Trusted/familiar investigator
  - College and research center support
- Challenge: cultural differences in meteorology and transportation disciplines
- Objectives:
  - Added value from new information
  - Measure change in behavior
  - Impact on transportation performance
- Problems:
  - Market penetration limited in new ITS
  - Measuring crash impact, needs long study period

Panel 4A -- Government Decision Support Capabilities and Services

Vision

- Improve transportation operations and outcomes
  - Advanced DSS applications
  - Open environmental information systems
  - National highway infostructure
  - Dedicated surface transportation research program

Suggested Public/Private Roles

- Federal: manage core R&D and deliver core services
- Private: Tailor information for DSS; value added
- State DOTs: govern direction and focus
- R&D Organizations: free and open access to results of R&D

RSPA

- Advance strategic goals and avoid duplication
- Specify weather information needs
- Identify new multi-modal R&D through partnerships
- Implement multi-modal products from R&D through partnerships
- Catalyst for federal/private partnerships
  - ITWS
  - USWRP
  - Remote sensing with NASA

WMATA

- User of weather services
- Use best information to keep buses and rails running
  - Many decisions based on weather reports
  - Need projections for smallest areas possible + updates

Montgomery County Advanced Traffic Management System

- Weather effects: congestion, transit delays, safety, and agency resources
- Managing weather impacts
  - Use all available sources
  - Plan and prepare
  - Improve scheduling and deployment

U.S. Crashes and Weather Environment

- Adverse weather + adverse conditions= 28% crashes, 25% injuries, and 19% fatalities
- Factors
  - Impaired visibility
  - Decreased stability
  - Reduced controllability
- U.S. economic costs: $24 billion/year
- Customer/provider interaction critical to improving support to surface transportation systems

Panel 4B -- Commercial Decision Support Capabilities and Services

Panelists Demonstrated Capabilities

- Via television
  - Major weather events
  - Daily decision making
- Private service
  - Information for decision process
  - Sensors to differentiate ice from water
  - GIS based weather impact alerting systems
  - More Internet sites with decision information
- Research and demonstration
  - Modeling temp/radiation budgets
  - Weather advice for fuel savings

Panel/Plenary Discussions

- Escalate provider/user communications
  - Specific user decision information needs
  - Provider develop tailored decision products
- Integrate information and technology
  - Many mesonets and private observations
  - Current collection/assimilation capabilities
  - Use all avenues for education
- Find process to apply research to user needs
  - Need facilitator to identify the needs
  - Program to match resources to needs